

## MEMORANDUM

From Dr J. Haworth, MPD/RTD

To Dr H. Goodman, Director

Date 4 September 1975

Attention: TDR

Our ref. M2/370/8

Subject: LETTER FROM PROFESSOR J. LEDERBERG OF  
15 AUGUST 1975

Your ref.

Thank you for sending me Professor Lederberg's letter of 15 August 1975. It is certainly stimulating that he should take such an interest and pick up specific points hidden away in our TRS.

Dealing with the first point about owl monkeys infected with filaria which appear to be almost completely immune to infections of Plasmodium falciparum, this was an unpublished observation of Leon Schmidt of the Southern Research Institute, Birmingham, Alabama and he may be able to expand on it. There are, of course, other factors which might arise here as in this area the owl monkeys have contact with a number of other species and it may well be an area of P. brasilianum or P. simian infection although infection of Aotus with either of these species does not appear to have been reported. It would certainly be worthwhile following up this lead and we might write to Leon Schmidt if he had further information on this. There certainly is in man, co-incidence of malaria and filaria in many parts of Africa, Asia and South America and in fact, in Africa, mosquitos may be infected with both Wuchereria bancrofti and malaria parasites. Co-incident infections in man are certainly seen in Africa and Professor Buck has catalogued a number of infections in people in Chad in a paper being published on a meeting of the Institut de la Vie. In respect to the absence of P. vivax in West Africa, this has been put down to a genetic cause and very recently, a paper by Miller et al. has appeared in Science, 189, pages 561-3, 15 August 1975 on the Duffy determinants and it is suggested that there is a correlation between these determinants and the presence or absence of P. vivax. They go even further and suggest that the Duffy blood group determinants ( $Fy^a$  or  $Fy^b$ ) may be erythrocyte receptors for P. vivax. It is also known that P. vivax is rare in American negros of West African origin. We are attaching a copy of TRS 433 for Professor Lederberg in case he needs it.

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Luzatto actually  
show this is  
in vitro?*

In respect to his question on mechanisms of anti-malarial immunity and immunity of the new-borne, this has been reviewed by I. A. McGregor in the British Medical Bulletin, 28, No. 1, January 1972 and again by McGregor in the Bulletin of the WHO, 50, pages 259-266 of 1974. As you know, there is a further report of the Developments in Malaria Immunology which is in second proof for the TRS series and we should be able to send Professor Lederberg a copy of this very shortly. In this report it is stated that maternally-derived antibody demonstrated in rodents and primates is probably important in protecting the offspring of immune mothers. Furthermore, these offspring may subsequently mount better active immune responses than unprotected young. This suggests maternally transmitted antigen or antigen-antibody complexes may help in initiating acquired immune responses. It is thought at present that it is this cause rather than  $Hb^F$  being involved.

... Encl.

On the other hand, the article by Gillet and Herman "Recherches sur le paludisme congénital de la souris avec Plasmodium berghei berghei" Bulletin of WHO, 1974, 51, 285-298, raises some interesting points.

On Professor Lederberg's third point, the Manila International Malaria Eradication Training Centre was mainly supported by USAID but this support was withdrawn during the financial year 1973/74 and the Centre has now been disbanded. There is in its place a National Training Centre run by the Philippines Government with the assistance of WHO hence, it would perhaps not be a suitable candidate site for interdisciplinary workshops and you are, of course, aware of the Master of Public Health Course in malaria and other parasitic diseases being run at the School of Public Health, Teheran and this would possibly be a much more appropriate site nowadays.

I hope that these points answer, to some extent, Professor Lederberg's queries. He certainly does raise interesting points.

